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# Analysis of Industrial Transformation of Resource-based Towns in Qingyang City: Taking Qingcheng County as an Example

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**Abstract** As people exploit resources vigorously, the amount of exploitable resources is decreasing. Due to long-term unsustainable development, resource-based cities and towns have encountered problems such as lack of resources and slow economic growth. Faced with the "resource curse" phenomenon, the transformation of resource-based cities and towns is an inevitable trend to achieve sustainable development. In this article, taking Qingcheng County as an example, by analyzing and researching the development status and existing problems of resource industry, the stage of industrial development in Qingcheng County is discussed to prove the importance of industrial transformation to the sustainable development of Qingcheng County, the experience and lessons that Qingcheng County can learn are summarized, and the objective laws and influencing factors in the acceleration of industrial transformation in Qingcheng County are analyzed in depth. Using SWOT analysis, specific countermeasures are explored to realize the industrial transformation of Qingcheng County.

**Key words** Resource-based town, Qingcheng County, Industrial transformation, SWOT analysis

## 1 Introduction

Among the existing resource-based cities and towns in China, more than 80% of them in maturity and recession periods, and the pressure for transformation is very severe<sup>[1–2]</sup>. The decline of development of resource-based towns is not caused by unilateral problems. Instead, it is the result of long-term accumulation of economic, social, demographic, environmental and resource issues. Therefore, only by regulating and solving these problems can we get out of the predicament. Urban industrial transformation is an inevitable choice for resource-based towns to achieve sustainable development. According to the life cycle theory of resource-based towns, Qingcheng County is a growing resource-based town. The mineral resources under its jurisdiction are rich and widely distributed. At the same time, as one of the most dynamic areas in Qingyang City, Qingcheng County possesses rich mineral resources, agricultural resources and tourism resources.

In particular, it has great potential in industrial development. The resource-based economic development strategy has made outstanding contributions in the development process of Qingcheng County. However, as the rapid economic development, the drawbacks of this traditional economic development strategy have gradually appeared. The petroleum resources in some areas of Qingcheng County have been exhausted, and the quality has also declined. The difficulty of mining increases, and the ecological environment is not optimistic<sup>[3–4]</sup>. As a resource-based town, how

to promote industrial transformation and achieve sustainable development is the challenge facing Qingcheng County. The development model of Qingcheng County is an example of the development of other resource-based towns in Qingyang. Studying the industrial transformation of Qingcheng County is of great significance to the sustainable development of resource-based towns in Qingyang.

## 2 Overview of research

**2.1 Overview of resources** Qingcheng County is rich in mineral resources, which are widely distributed. It is the birthplace and main producing area of Changqing Oilfield. Currently, the types of resources that have been discovered in Qingcheng County are rich and diverse, including oil, natural gas, quartz sand, building sand, clay for bricks and tiles, stone, limestone, mineral water and so on. There are more than 30 mines, including one large oilfield, one medium oilfield and several mines and mineralization sites of clay for bricks and tiles and sand and gravel for construction<sup>[5]</sup>.

In Qingcheng County, the development momentum of agriculture is good, and that of food, oil beans, animal husbandry, melons and vegetables, fruits, daylily, flue-cured tobacco and mixed fruits, the eight characteristic agricultural products, is the most prominent. The stunning Zhouzu Forest Park, the simple and elegant Puzhao Temple Hall, Zhoujiubang Mufang have great potential for the development of tourism in Qingcheng County with their unique charm.

**2.2 Development status of society and economy** Qingcheng County has a total area of 2 692.6 km<sup>2</sup> and administers 154 villages in 5 towns and 10 townships. It is the main production area of Changqing Oilfield, and is a resource-based town with the most outstanding overall economic benefits in Qingyang City, with a sound economic base. At the end of 2012, the total population of the county was 316 700, and the population of the downtown was nearly 80 000,

Received: April 22, 2020 Accepted: June 5, 2020

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with an urbanization rate of 25.3%. The national economy has grown steadily. In 2012, the county's gross domestic product (GDP) reached 6.53 billion yuan, an increase of 13.8% over the previous year calculated at comparable prices. Based on the total population, the GDP per capita reached 22 782 yuan. Among it, the added value of the primary industry reached 614 million yuan, an increase of 6.5%; the added value of the secondary industry was 5.054 billion yuan, an increase of 15%; and the added value of the tertiary industry reached 862 million yuan, an increase of 13.3%<sup>[6]</sup>.

**Table 1** SWOT analysis of industrial transformation of Qingcheng County

Opportunity and threat	Strength (S) Large potential for oil and gas exploration and development ( $S_1$ ) Outstanding advantages of other resources ( $S_2$ )	Weakness (W) Single industrial structure, unclear follow-up resources ( $W_1$ ) Low resource utilization rate and deteriorating ecological environment ( $W_2$ ) Shortage of resources such as water and coal ( $W_3$ )
Opportunity (O) Building Longdong Energy and Chemical Base ( $O_1$ ) Green agricultural products processing base and tourism base ( $O_2$ )	SO combination option (1) $O_1S_1$ (2) $O_2S_2$	WO combination option (1) $O_1W_1$ $O_2W_3$ (2) $O_2W_2$
Threat (T) Irreversible reduction in oil production and difficulty to develop other resources ( $T_1$ ) High social stability pressure ( $T_2$ )	ST combination option (1) $T_1S_1$ (2) $T_2S_2$	WT combination option (1) $T_1W_1$ (2) $T_2W_2$ $T_2W_3$

### 3.1 For the SO combinations, industrial integration can be adopted

With the rapid development and spread of the information industry, the industrial boundaries of some large-scale production divisions are gradually blurring and melting, and new industries are developed as the original industrial boundaries amalgamate, becoming the main growth point of the economy<sup>[7]</sup>. For the integration of the primary industry with the secondary and tertiary industries in Qingcheng County, focus should be placed on developing modern agriculture and improving the level of agricultural science and technology, that is, strengthening pre- and post-production breed, information, technology, processing and trade services, accelerating the process of agricultural industrialization, radiating the rapid development of transportation, catering, service and other industries, strengthening the integration of ecological agriculture and leisure tourism agriculture, and paying attention to high-tech breeding, factory production, standardized production of high-quality brand agricultural products, harmless production of green food, fine processing of agricultural products, transportation of warehousing agricultural products.

### 3.2 For the ST combinations, the following methods can be adopted

(i) Advocating the transformation from "environment-unfriendly" to "green", and vigorously developing special agricultural products. The decline of Yumen is mainly due to the single industrial structure. During the heyday of petroleum exploitation, the follow-up industry had not been well developed. This is undoubtedly the best lesson for the development of Qingcheng. Qingcheng County was once the birthplace of the farming culture of the Chinese ancestors. It has a brilliant agricultural civilization

## 3 SWOT analysis of industrial transformation in Qingcheng County

According to the analysis of the status quo of Qingcheng County and the analysis of the problems existing in its development, the current superiorities and weaknesses, opportunities and threats facing Qingcheng County are summarized. Based on the results shown in Table 1, the following strategies for industrial transformation of Qingcheng County are put forward.

and has the potential to develop agriculture. Therefore, to regain the glory in agricultural history, taking agriculture as a follow-up industry for the mining of petroleum and other minerals and choosing the road of "environment-unfriendly" to "green" agricultural transformation and development is a practical need to realize the sustainable development of Qingcheng County. Qingcheng County should actively develop high-quality agricultural products of excellent varieties, distinctive characteristics and high added value, and create characteristic ecological agriculture and organic agriculture. (ii) Giving full play to the advantages of tourism to drive economic development. According to the principle put forward by the government, "Planning is the guide, scenic spots are the core, culture is the soul, ecology is fundamental and people's livelihood is the goal." Around the three major tourism resources of Zhou Zu farming culture, Qihuang traditional Chinese medicine culture and Red Revolution Culture, Qingcheng County should insist on developing tourism and building a famous historical and cultural county. Relying on Zhouzuling National Forest Park, the development of leisure agriculture and rural tourism is taken as an important supplement to agricultural expansion and tourism. Thus, rural tourism such as leisure agricultural parks, leisure farms and farmhouses will develop rapidly. (iii) Adopting an investment promotion model. Attracting domestic and foreign investment is an important way to transform the economic structure of resource-based cities. External investment can not only bring capital to urban development, and it can also bring advanced technology, management and ideas. The rich natural resources, large amounts of idle land and factories and cheap labor of Qingcheng County are important factors for at-

tracting foreign investment.

**3.3 For the WO combinations, diversified industries can be developed** By seizing the opportunity of building Longdong Energy and Chemical Base, with the help of the national regional development policy, urbanization policy and a series of preferential policies formulated by itself, Qingcheng County strives to build into a "production and service base for national large-scale energy base" and "old petroleum area's circular economy development demonstration base and tourism and leisure and characteristic cultural industry base". Under the guidance of "stabilizing grain production, optimizing fruit tree cultivation, expanding grazing, strengthening afforestation" proposed by the government, the three major industries of fruits, vegetables and livestock will be vigorously developed into pillar industries. While developing agriculture and industry, the development of tertiary industry such as modern logistics, real estate, tourism and community services is promoted to form a diversified industrial structure.

**3.4 For the WT combinations, the following methods can be adopted** (i) Promoting industrial transformation through institutional innovation. The impact of the system on productivity cannot be underestimated, and it is the main factor that promotes industrial transformation and development. Urban transformation can achieve industrial transformation by getting rid of excessive dependence on resources<sup>[8]</sup>. The transformation of Qingcheng County must be government-led and enterprises-based. Relying on scientific research institutions and universities, new technologies will be developed to extend the life cycle of resource industries and promote resource development. Investment in other industries will be increased to improve the overall development level of the industry. The government can implement some preferential policies for industries with high development potential, such as agriculture and tourism, to promote the industrial transformation of cities and towns. (ii) Promoting the upgrading of industrial structure and achieving diversified development. The urban transformation in the Ruhr area of Germany and Houston in the United States has the following characteristics. On the one hand, emerging industries are vigorously supported. On the other hand, the length of the traditional industrial chain is extended continuously and its depth is expanded, in order to form a development pattern of industrial diversification<sup>[9-10]</sup>. These provide lessons for Qingcheng County to promote industrial transformation. The adjustment and optimization of industrial structure in Qingcheng County should avoid resource development. Instead, it should combine resource development with processing and manufacturing, develop circular economy, explore ecological agriculture, and develop sachet, paper-cutting, tourism, logistics and other industries. (iii) Overcoming the bottleneck restricting the transformation of Qingcheng. There are many factors that restrict the development of economy and society of Qingcheng County, especially bottlenecks in transportation, water resources, ecology, talents, etc. To eliminate these bottlenecks, Qingcheng County can construct some important expressways and railways starting from constructing large traffic and building large networks to facilitate contact with surrounding areas, strengthen the protection of key water source areas and complete the urban water supply project as soon as possible to solve the bottleneck of water supply and ensure the security of urban and rural

people's water use, strengthen the ecological environment construction, and implement natural forest protection, "Three-North Shelterbelt" and other projects to expand afforestation area. At the same time, it should drive the development of other industries to form a diversified industrial structure. Thus, Qingcheng County will gradually develop into a comprehensive county.

## 4 Conclusions

At present, the development of Qingcheng County's resources, natural gas and other resources is in a stable period. The leading industries in the urban economic structure are more prominent, and the social and economic development trend is good, in the growth stage of the development of resource-based cities. In the development stage of resource-based cities, the cities have the dual task of continuing to develop leading industries and choosing alternative industries. Exploring and nurturing new economic growth industries will create conditions for the gradual transition of professional cities to comprehensive urban transformation. Therefore, on the basis of overcoming the problems of single industrial structure, deterioration of the ecological environment, and lagging infrastructure, Qingcheng County cannot completely give up the leading position of the petroleum industry. It should take modern agriculture and tourism as new alternative industries, and vigorously develop the basic industries of transportation, warehousing, information and agricultural products deep processing to form a pattern of common development of multiple industries. In the development of urban economy and industry, the industrial transformation of resource-based cities and towns will be gradually achieved.

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